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ABSTRACT

Developed as part of the ABCs of Construction National Workplace Literacy Project, this instructional module teaches general, specialized, and technical terms encountered by persons employed in the occupation of millwright. Included in the module are the following: a discussion of the difference between general, specialized, and technical vocabulary words; strategies for learning new words; tips for remembering new words; hints for vocabulary development; and five exercises in which students are required to work with general, specialized, and technical vocabulary encountered by individuals employed as millwrights. (MN)

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Specialized, & Technical Terms

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MODULES OF INSTRUCTION DEVELOPED IN GRANT CYCLE

1. Writing Frames for Construction Workers (10 exercises)

for low-level readers; consists of 10 "paragraphs" with open-ended sentences for workers to complete and recopy in their notebooks. Topics deal with work and training, such as "My Job," "Classroom Behavior," and "Listening to Myself."

2. Writing About Your Craft (10 topics)

for all students; list of 10 topics, such as "My Boss," "The Main Beef About My Job," and "How Work Orders Are Delivered." Used for integrating reading and writing in a job-specific context.

3. Building Workplace Vocabulary for E & I: Structural Analysis (80 pages)
Building Workplace Vocabulary for Millwrights: Structural Analysis(79 pages)
Building Workplace Vocabulary for Pipefitters: Structural Analysis(79 pages)

5th grade level; teaches word attack skills for technical terms, utilizing word parts and root words; includes hints for retaining meanings by building card file with visual representations of terminology.

4. Building Workplace Vocabulary for E & I: General, Specialized, & Technical Terms (58 pages)
Building Workplace Vocabulary for Millwrights: General, Specialized & Technical Terms (29 pages)
Building Workplace Vocabulary for Pipefitters: General, Specialized, & Technical Terms (32 pages)

5th grade level; teaches different kinds of vocabulary words encountered in work-related texts; drills for remembering new words; tips for building vocabulary; some dictionary use.

5. Building Workplace Vocabulary for E & I: Compound Words (28 pages)
Building Workplace Vocabulary for Pipefitters: Compound Words (18 pages)
Building Workplace Vocabulary for Millwrights: Compound Words (22 pages)

5th grade level; strategies for finding the meanings of compound words used in technical writing; works with words in context

6. Improving Listening Skills: Hazards Communication (18 pages)
Improving Listening Skills: Fire Extinguishers (22 pages)

a viewing, study guide that accompanies a commercial training video used in the required 8-hour OSHA safety course; learning new words, main ideas, and drawing conclusions are covered.

7. Measuring Decimals: Millwright (28 pages)

instruction and application problems

8. Improving Study Skills/Test Taking (60 pages)

6th grade level; good study skills are needed for success in the ABC Training program; explores strategies for organizing class notes and study time; analysis sheet for determining weaknesses in test preparation; how to schedule to arrange study time and work time

Computer Program

"Math for Pipefitters" is an interactive, multi-media program that covers fractions, decimals, angles, and right triangle geometry in a pipefitting context (88 screens)

MILLWRIGHT-GENERAL 29 PAGES

<F1: Help>

Statistics for: B:\GENERAL.MIL

Readability Statistics

Flesch Reading Ease:	81	Flesch-Kincaid Grade Level:	4
Gunning's Fog Index:	7		

Paragraph Statistics

Number of paragraphs:	304	Average length:	0.8 sentences

Sentence Statistics

Number of sentences:	264	Short (< 12 words):	257
Average length:	9.3 words	Long (> 30 words):	0
End with '?':	59		
End with '!':	0		

Word Statistics

Number of words:	2624	Average length:	4.18 letters
		Syllables per word:	1.37

<Enter: Next Screen> <Esc: Done>

<F1: Help>

Document Summary for: B:\GENERAL.MIL

Readability Statistics	Interpretation
Grade level: 4 (Flesch-Kincaid)	Easy for most readers.
Reading ease score: 81 (Flesch)	This represents less than 6 years of schooling.
Avg. sentence length: 9.3 words	May indicate choppiness or lack of sentence variation. Try varying sentence length.
Avg. word length: 1.37 syllables	Most readers could understand the vocabulary used in this document, based on syllables per word.
Avg. paragraph length: 0.8 sentences	Avoid 1-sentence paragraphs in business or technical writing.

<Enter: First Screen> <Esc: Done>

BUILDING WORKPLACE VOCABULARY FOR MILLWRIGHTS: GENERAL, SPECIALIZED, & TECHNICAL WORDS

OBJECTIVE: To learn the differences between general, specialized, and technical words.

Think about the tools you use at work. Some, like wrenches, are tools that all sorts of people use every day. Others are not so common. An example of such a tool might be a pipe wrench. Still other tools are not used by anyone but a millwright. Words are like this, too. **GENERAL VOCABULARY WORDS** are those words that all people use, for example, ***pretty, force,*** and ***side***. **SPECIALIZED VOCABULARY WORDS** are words that people in two or more special groups use. ***Heel, socket,*** and ***tackle*** are examples of specialized vocabulary. **TECHNICAL VOCABULARY WORDS** are those that people in only one profession use. Words like **pawls, gantry,** and ***reeving*** are technical terms. Your text contains examples of all types of vocabulary. So, you'll need practice at finding and remembering the meanings of all of them. Lessons in the TDC relate to your job as a millwright. When you work with new words, you take the first step in remembering them.

Unlike tools, people give you words every day. Some are words you know. Others are new to you. How well you know a word depends on how many times you've read or heard it. Look at Table 1 on page 4. This shows that knowledge of words range from knowing nothing to exact understanding (Dale, 1958). These stages help you decide what you know about a word. They also tell you what else you need to learn about it.

You use these stages before, during, and after reading. To help you get ready to read, see if your text lists terms. This list might come before or after the reading. If your text has a list, rate your knowledge of the terms. This way you learn how much you know and what you need to learn. As you read your text, rate the new words you meet. Rate **0** the words you have never seen or heard. Rate **1** the words you have seen or heard, but are unsure of their meanings. Rate **2** the words you can generally define. Rate **3** the words you know and use. Write down words you need to learn. After reading, check your list again. Have any of your ratings changed? Remember, your goal is to make words you ranked first as ***0's and 1's, into 2's or 3's.*** How do you do this?

You add to your vocabulary by finding the meanings of new words. You can do this in one of four ways. The easiest way is to ask someone. Or, you could look in a dictionary. These ways don't always work, however. Why? When you read, you are sometimes alone. Also, there are times when you read without a dictionary handy. Thus, you need ways for finding word meanings that depend on nothing but you. One such method is **CONTEXT**. This means you use words around the unknown word to help you define it. People use context to learn new words more than any other way. But, other methods do exist. A second independent way to define

words is to break unknown words into parts. First, you find out what the parts mean. Then you add them together to find out the meaning of the new word. Sometimes these words are **COMPOUND WORDS**. Compound words are larger words. They are formed by two smaller words. Sometimes you use **STRUCTURAL ANALYSIS.** This is another way of using word parts. Lessons on compound words for millwrights are in this lab. So are lessons on structural analysis. Once you find the meaning of a new word, you need to remember it. Help for doing so follows in this unit.

LEARNING NEW WORDS

One way to learn new words involves using a **WORD FILE**. To make a word file, you use index cards and a small card file box with alphabetical or subject tabs. Old-fashioned word cards contained the word on the card's front. The meaning appeared on the back. Newer, more helpful word cards take more work. They help you connect what you already know with the new word. This helps you remember it. What do these new cards involve?

First, write the new word on the card. As you write the word, be sure you say it correctly. While saying the word, try to think what the word means to you. Next, you record one of these thoughts on your card. Under the word, draw a picture that best shows the word's meaning. Third, divide the back of the card into fourths. Write the meaning of the word in one fourth. In a second fourth, you list words that mean the same thing as the new word. In the third, you list words that mean the opposite of the new word. Finally, you write a sentence with the new word in the last fourth. Table 2 contains an example of such a word card. Reviewing the cards in your word file helps "lock" new words into your memory.

TABLE 1

STAGES OF VOCABULARY DEVELOPMENT

Stage	Meaning
3	You know the word's meaning and can use it in a sentence.
2	You recognize the word and can define it in general terms.
1	You recognize the word but can't define it or use it.
0	You know the word is new to you.

EXERCISE 1

Examine the words below. Rank your knowledge of them based on Table 1. These words are taken from the first year millwright curriculum.

_____	1. countersink	_____	11. sag
_____	2. convex	_____	12. micrometer
_____	3. linesman	_____	13. capscrew
_____	4. dowels	_____	14. tail blinds
_____	5. striking face	_____	15. lubrication
_____	6. coarse	_____	16. mandrel
_____	7. limber	_____	17. taper
_____	8. tempered	_____	18. piston
_____	9. arcs	_____	19. viscosity
_____	10. radius	_____	20. manifolds

TABLE 2

EXAMPLE OF WORD CARD

Front of Card

torque

Back of Card

twisting motion	twist tight
He torqued the bolt.	loose free easy

TIPS FOR REMEMBERING NEW WORDS.

It would be easier if you only needed one set of words in life. You could just get a list and learn it. There is one bad thing about this, however. You'd have a very limited vocabulary. Changes in life (jobs, friends, hobbies, interests, current events) require you change the words you use. It doesn't matter how you find the meanings of words. It doesn't matter how you learn those meanings. It only matters that you do. Table 3 contains some hints to build your vocabulary.

TABLE 3

HINTS FOR VOCABULARY DEVELOPMENT

1. When you see a new word, try to find its meaning. Use context, its structure, or compound words to define it. Look it up in a dictionary only after you have tried these.

2. Limit the number of new words you try to learn each day. Your mind can learn only so many daily. You add needless stress to life when you overwork your memory.

3. Be certain you say the word correctly. You need to check pronunciation in a dictionary. You could also ask someone how to say the word. Having once learned it wrong makes it hard for you to change.

4. Once you know a word, it's yours. Don't be afraid to use it.

EXERCISE 2

Marco needs to make a base plate for a leg on a compressor. He drills holes for a bolt in a blank. He decides to clean the burrs from the holes. Marco checks his text to get information about files:

> Most rasps and files have the tang type handle attachment. Always put on a handle before using the tool, to avoid injuring you hand on the **tang**. If you must use a handle with a hole too small for the tang, take an old file with the same size tang and heat until red hot. Use the heated tang to burn out the handle hole to the right size. Before you put the handle on, wet the tang. To ***seat*** the tang firmly in the handle, tap the butt of the handle on a hard surface. Do not hammer the file into the handle.

1. What does the word ***tang*** mean in the first sentence of this paragraph?

_____

_____

2. Do you know another meaning for ***tang?*** If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

3. Is ***tang*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

4. What does the word ***seat*** mean in the next to last sentence of this paragraph?

_____

5. Do you know another meaning for ***seat?*** If, so, write the meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

6. Is ***seat*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

7. What does the word ***file*** mean in the last sentence of this paragraph?

_____

_____

8. Do you know another meaning for ***file?*** If, so, write the meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

9. Is ***file*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

❖

EXERCISE 3

Phil needs to replace a skid on a small portable generator. He gets a stock piece of channel. He wants to cut a section of it to use as the skid. He plans to use a band saw. Phil decides to check his text before he starts the job.

> Band saw blades are sized by ***points*** (tooth point per inch), thickness (gage) and width. The four common ***tooth*** forms are regular, hook, skip, and carbide. The use of a particular tooth form depends upon the operation and the material to be cut. A band saw blade is bent alternately to the right and left to provide clearance. This offsetting is called the set of a blade. Two common sets are the ***racket*** set and the ***wave*** set. Racket set is recommended for contour cutting, and wave set is recommended for work with varying cross-sectional thickness and irregular shapes.

1. What does the word ***points*** mean in the first sentence of this paragraph?

_____

_____

2. Do you know another meaning for ***points?*** If so, write it on the line below. Use a dictionary if you want.

_____

_____

3. Is ***points*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general c. specialized c. technical

How do you know?

_____

_____

4. What does the word ***tooth*** mean in the first sentence of this paragraph?

_____

_____

5. Do you know another meaning for ***tooth?*** If so, write it on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

6. Is ***tooth*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

7. Think about the word ***racket***. What does it mean?

_____

_____

8. Do you know another meaning for ***racket***? If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

9. Is ***racket*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general c. specialized c. technical

How do you know?

10. Think about the word ***wave***. What does it mean?

11. Do you know another meaning for ***wave?*** If so, write it on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

12. Is ***wave*** an example of general, specialized, or technical vocabulary? Circle your response.

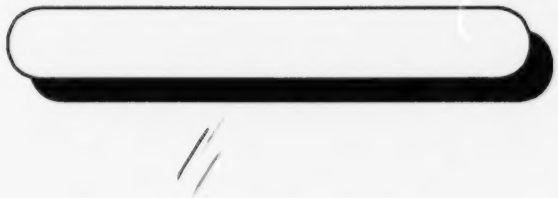
a. general b. specialized c. technical

How do you know?

_____

_____

❖



Ricardo got a casting from the foundry. He needs to machine a part for a custom high pressure valve. He wants to polish the surface of what will be the flange. He checks his text to see if a lathe will do the job.

> The metal working lathe is a basic machine tool used to make rounded parts such as ***pins***, shafts, and bolts. With proper set-up and accessories, the lather can perform machine operations such as ***facing***, straight and taper turning, drilling, ***threading***, boring, and polishing. In all lathe operations, the cutting tool is ***fed*** against a turning workplace.

1. What does the word ***pins*** mean in the first sentence of this paragraph?

2. Do you know another meaning for ***pins?*** If so, write the meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

3. Is ***pins*** an example of general, specialized, or technical vocabulary? How do you know?

_____

_____

4. What does the word ***facing*** mean in the second sentence of this paragraph?

_____

_____

5. Do you know another meaning for ***facing?*** If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

6. Is ***facing*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

7. What does the word ***threading*** mean in the second sentence of this paragraph?

_____

_____

8. Do you know another meaning for ***threading?*** If so, write the meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

9. Is ***threading*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

10. What does the word ***fed*** mean in the last sentence of this paragraph?

_____

_____

11. Do you know another meaning for ***fed?*** If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

12. Is ***fed*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

❖

EXERCISE 5

The shaft which turns the damper on an exhaust stack at the refinery needs replacing. It is a 12' shaft. Johannah is not sure what size lathe to use. Her text tells her this information:

> The size of a lathe is determined by the ***swing*** and ***bed*** length. The swing indicates the largest ***diameter*** of work that can be turned. The bed length is the entire length of the ways.

1. What does the word ***swing*** mean in the first sentence of this paragraph?

2. Do you know another meaning for ***swing?*** If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

3. Is ***swing*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How do you know?

_____

_____

4. Do you know what the word ***bed*** means in the second sentence of this paragraph? If so, write this meaning on the lines below.

_____

_____

5. Do you know another meaning for ***bed***? If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

_____

_____

6. Is ***bed*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How to you know?

7. Think about the word ***diameter***. What does it mean?

8. Do you know another meaning for ***diameter***. If so, write this meaning on the lines below. If not, check a dictionary to see if there is one. If so, write the meaning on the lines below.

9. Is ***diameter*** an example of general, specialized, or technical vocabulary? Circle your response.

a. general b. specialized c. technical

How to you know?

_____

_____

❖ ❖